



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/084,336

02/28/2002

Dieter Kerner

39509-177800

5608

26694

7590

08/08/2008

VENABLE LLP

P.O. BOX 34385

WASHINGTON, DC 20043-9998

EXAMINER

ZIMMER, MARC S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/08/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/084,336	Applicant(s) KERNER ET AL.	
	Examiner MARC S. ZIMMER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 8 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 8 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mangold et al., JP 2000-169132 in view of the teachings taken from Chapter 6 of the volume entitled *Handbook of Fillers, 2nd Edition* authored/edited by Wypych, Herzig, U.S. Patent # 4,101,499, Penneck, U.S. Patent # 4,001,128, and Cyprien Guy et al., U.S. Patent # 4,886,661 for the reasons established earlier.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hemme et al., U.S. patent Application Publication No. 2002/0018741 in view of the teachings taken from Chapter 6 of the volume entitled *Handbook of Fillers, 2nd Edition* authored/edited by Wypych, Herzig, U.S. Patent # 4,101,499, Penneck, U.S. Patent # 4,001,128, and Cyprien Guy et al., U.S. Patent # 4,886,661 for the reasons established earlier.

Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mangold et al., JP 2000-169132 in view of the teachings taken from Chapter 6 of the volume entitled *Handbook of Fillers, 2nd Edition* authored/edited by Wypych, Herzig, U.S. Patent # 4,101,499, Penneck, U.S. Patent # 4,001,128, and Cyprien Guy et al.,

U.S. Patent # 4,886,661 as applied to claims 13-16 above and also in view of
Lentz, U.S. Patent # 3,122,520 for the reasons established earlier.

Response to Arguments

The Examiner will respond to Applicant's arguments in the order they were presented. The format will be to first present what are regarded as the more salient points of Applicants' reply followed by the Examiner's own response.

Table 6 of the declaration provides mechanical and optical characteristics of the vulcanized products with 20 % silicic acid. In paragraph 4, the results are characterized as "extraordinary" in terms of high transparence relative to other products. The Declarant, a person skilled in the art, considered this level of transparence as "unexpected". The tear resistance of the products is also indicated by the Declarant, one skilled in the art, as both "surprising and unexpected" (emphasis theirs). In paragraph five, it is stated that the hydrophobic doped products show "good dispersability" and "intermingling" relative to the non-surface modified doped products.

Also

The art may suggest better "solubility" of the treated particles in a hydrophobic environment. This by itself does not establish the possibility of high concentration (20 %) of the particles of the invention in a liquid silicone rubber formulation, low rheological properties (Table 5), easy intermingling, and extremely good wettability. Vulcanization of this formulation leads to highly desirable properties- resistance to tear and extraordinary high transparency. Dr. Jurgen Myer, a person skilled in the art, opined that these results were both "surprising" and "unexpected" (emphasis theirs). The examiner has only based his finding of "expected" results on speculation. The invention permits operation at high concentrations and low viscosities.

The Examiner submits that the opinions of the Declarant are contrary to the teachings of the prior art. In his October 23, 2007 correspondence, the Examiner summarized the teachings of six references as they pertained to the present disagreement, i.e. whether or not improved wettability of a treated oxide (and, therefore, more facile blending), improved rheological properties (improved over an analogous

system wherein the oxide filler was untreated), improved optical properties, etc. are unexpected or not. These references (Caradori et al., U.S. Patent # 6,288,143, Eguchi et al., U.S. Patent # 5,739,199, Bergstrom et al., U.S. Patent # 6,384,125, Burns, U.S. Patent # 6,051,672, Canpoint, U.S. Patent # 6,462,104, and Lutz et al., U.S. Patent # 4,344,800) together serve to refute Applicant's contention that the results outlined in their Specification are unexpected.

These references have not been recited formally as a part of the rejection because it has not, in the Examiner's estimation been necessary to do so. Rather, they have been mentioned only to counter any assertion that the rejection under 35 U.S.C. 103(a) should be withdrawn on the grounds that Applicant has identified unexpected results. Better wettability may be attributed to the fact that, by modifying the oxide surface, it has a less polar and more hydrophobic surface that is more compatible with the host matrix into which it is incorporated. Improvements in the properties of a polymer containing an organosilicon-modified filler relative to those containing an untreated filler are easily rationalized by the fact that an untreated filler would exhibit a much greater tendency to agglomerate than would a treated filler due to the significantly greater incompatibility of the former in the polymer host. (The impact that agglomeration has on, for instance, optical properties is that particles large enough to refract light are obtained inside the matrix.) The effects of treating oxide- and other inorganic fillers when incorporating them into a polymer matrix are very well documented. Nevertheless, the Examiner has furnished for Applicant's edification six

references that demonstrate in no uncertain terms that one of ordinary skill could absolutely expect the improvements outlined in the Declaration.

Finally, it is respectfully pointed out that, although the Declarant would unquestionably be regarded as one skilled in the art, his opinions cannot be free of bias.

There is no mention of a need for a hydrophobic surface. Rather, Mangold et al. desire a hydrophilic surface, which appears necessary for the inkjet paper and inkjet film applications. Accordingly, it is not seen why one of ordinary skill in the art would modify the hydrophilic surface to render it unfit for its use in inkjet paper and film applications by giving it a hydrophobic character. (This modification would seem to be contrary to employing common sense)

The Examiner has addressed this objection repeatedly, but will do so again. The employment of the oxide particles in the manufacture of inkjet paper represents only one of a plurality of applications identified by Mangold for their invention. Another application is the addition of the oxide particles as a filler to a polymer host. *It is for this particular application that treatment of the particles with an organosilicon reagent would be advantageous.*

The Examiner appears to be of the opinion that showing the existence of a technology is akin to showing that the application of a technology to solve a particular problem. The assembled references do not appear to have a common theme other than the mention of silica. The Examiner has apparently used the application to assembled references and then assumes that he has established a proper prima facie case of obviousness. There is not a problem solved by the secondary references, which appears to exist in the primary reference and which would suggest the combinability of the references.

The Examiner submits that, were it necessary for a primary reference to admit shortcomings associated with the invention taught therein- the shortcomings in this case being those linked to the introduction of untreated oxide filler into an organic polymer

Art Unit: 1796

host- for the Examiner to be able to make a proper combination, than the holding of claims as unpatentable on the grounds that they are prima facie obvious would all but cease to exist. Indeed, the author of a patent application rarely identifies an aspect of their invention that could be improved. The problems related to the addition of untreated fillers to a polymer host are extremely well-known. Treating them with organosilicon compounds is, likewise, extremely well known as are the effects of this treatment. At least Wypych formally discloses on page 312 that hydrophilic fillers do not mix well with polymer materials and, further, that this problem is typically addressed by modification of the filler surface. Herzig, Penneck, and Cyprien Guy are cited for their teachings that, among the compounds used to modify filler surfaces are included those mentioned in Applicants' claims.

Further, as to the selection of one or more of octyltrimethoxysilane (Si 108), hexamethyldisilazane (HMDS), polydimethylsiloxane (PDMS) and γ -aminopropyltriethoxysilane (AMEO) as the surface modifying agent, there is no guidance provided which would have lead one to make the necessary selection.

The Examiner acknowledges that there is nothing in the teachings of Herzig, Penneck, or Cyprien Guy, or for that matter, the other patents mentioned *supra*, that necessarily leads one to select the four compounds outlined in claims 15 and 16 from the variety of different known treating agents. In the Examiner's estimation these are all known functional equivalents of one another, one being no less obvious than the other (or any other treating agent not mentioned by the art of record). If Applicant were able to demonstrate that, in fact, these treating agents impart even better properties than do

a representative sampling of other known treating agents, the Examiner would have to reconsider the rejection in view of that evidence.

Applicant offers mostly the same objections to the combination of Hemme with Herzig, Penneck, and Cyprien Guy and, hence, there is little need for the Examiner to address their arguments at any length except to say that it is completely untrue that Hemme fails to contemplate the insertion of the titanium dioxide into a polymer matrix. See paragraph [0023].

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

August 5, 2008

/Marc S. Zimmer/
Primary Examiner, Art Unit 1796

<i>Application Number</i> 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/084,336	KERNER ET AL.	
	Examiner	Art Unit	
	MARC S. ZIMMER	1796	